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Claims

1. (Currently Amended) A method for initializing a programmable system having at least one processor element, registers and internal and/or external modules, that is characterized in that information required for initializing registers and internal and/or external modules is stored in and read from external memory, the method particularly designed for application in programmable system on chip ASIC elements, the method comprising: the steps of:

after turn-on or other event triggering a fresh start of the programmable system,

(a) transferring initialization information for the processor system from an external or internal non-volatile storage medium to an internal memory coupled to a processor element, under the control of a program stored in an instruction memory portion coupled to the processor element, wherein the initialization information includes at least one initialization program and/or initialization data; and

(b) reading and transferring initialization data and further initializing the registers and modules under the control of the at least one initialization program transferred into the internal memory portion coupled to the processor element of the programmable system, and controls the

(c) using the initialization program to control the processor element to perform step(b).

2. The method of claim 1, further characterized in that an integrity check on the initialization information is performed after the transfer, and in that a program branch is carried out under the control of the result of the integrity check.

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3. The method of claim 1, further characterized in that, upon identification of an incorrect or missing internal or external storage medium, an error routine is executed which carries out the initialization with standard values or fully or partially restores the content of the internal or external storage medium.
4. The method of claim 1, further characterized in that the initialization data are read as standard values from the storage medium and altered by the processor element, and the altered initialization data are used for initialization.
5. The method of claim 1, further characterized in that the initialization program for the processor element calculates initialization data and uses the calculated data for initialization.
6. The method of claim 5, further characterized in that state data for peripheral components and/or internal components are taken as a basis for calculating the initialization data for these components.
7. The method of claim 1, further characterized in that the processor element changes to a power-saving mode following initialization.
8. The method of claim 1, further characterized in that the initialization of further processor elements is started and monitored.
9. The method of claim 1, further characterized in that adaptation to various storage media is performed.
10. The method of claim 1, further characterized in that the initialization program reloads further data and/or program code from a storage medium.

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